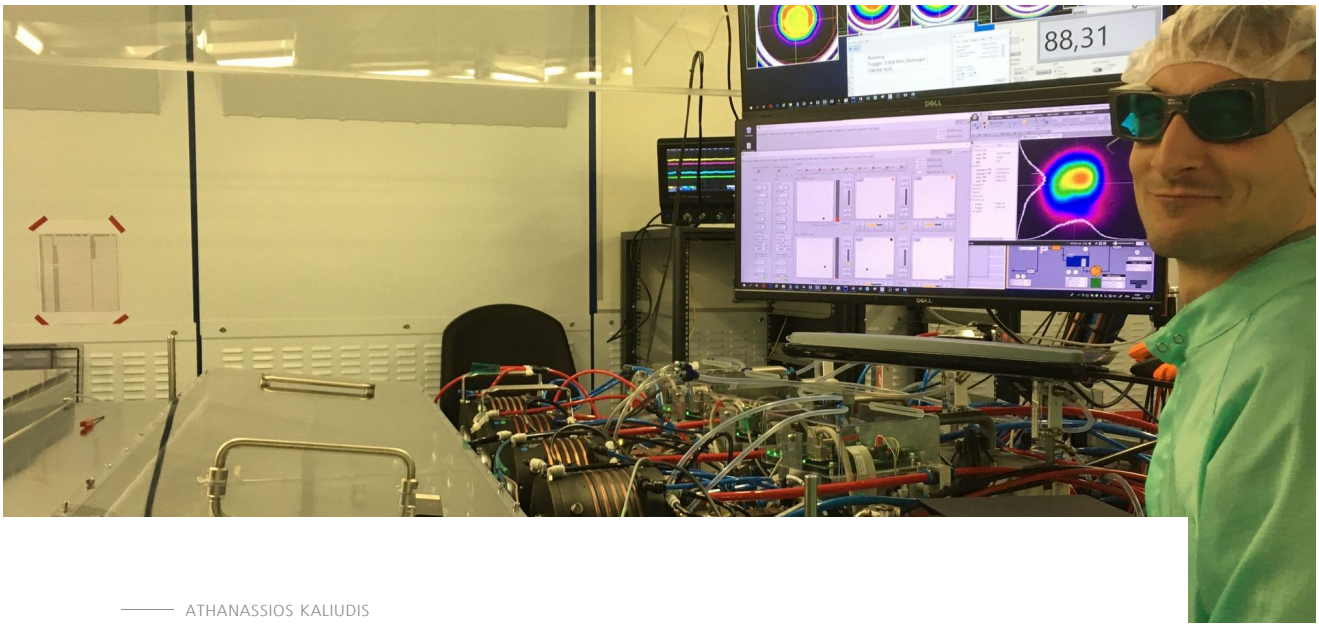

ATHANASSIOS KALIUDIS

How TRUMPF makes lightning strikes harmless

Every year, lightning strikes cause billions of dollars in damage worldwide. Airports, nuclear power plants or skyscrapers are particularly at risk. Thanks to a super laser developed by TRUMPF, such objects can be better protected in the future.

Five billion euros a year – that's the amount of damage caused by thunderstorms and lightning strikes in the United States alone. It is particularly devastating when they interrupt air traffic and damage aircraft or power lines. That is why the EU has launched the project “Laser Lightning Rod”. Its aim is to find a way to control lightning and redirect it in a targeted manner.

At the heart of this project is a unique super laser developed by TRUMPF Scientific Lasers over the last three years. With this laser, a kind of "channel" can be created in thunderstorm clouds, the so-called laser filament. As soon as a flash wants to unload from the storm cloud, this laser filament forces it to emerge out of the cloud by the predetermined channel. It then strikes the ground in a controlled manner.

The development of the laser system has cost around two million euros. In the summer of 2020, the test phase was supposed to take place in eastern Switzerland on Mount Säntis. Because of the Corona pandemic, the laser system is still in a French laboratory. TRUMPF project manager Kurt Michel is confident, however, that the new super laser will be able to pass the necessary tests in 2021. In five to ten years, it would be ready for use at airports or rocket launch pads

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